LNHP

LOUISIANA NATURAL AREAS REGISTRY

Quarterly Newsletter

Vol. 3, No. 1 September 2005

Working with landowners towards conservation of Louisiana's ecologically sensitive lands.

NATURAL AREAS REGISTRY UPDATE

The Louisiana Department of Wildlife and Fisheries (LDWF) and I would like to send our thoughts and prayers to those affected by Hurricane Katrina. LDWF employees worked hard to help evacuate flooded areas and answer calls from those that need help as well as from those across the United States that want to send help. Hurricane Katrina potentially affected landowners in 27 registered Natural Areas in 9 parishes. Please contact us if you have hurricane damage to your Natural Area and need management assistance or advice. The United States Department of Agriculture (USDA) has directed funds to the Natural Resources Conservation Service (NRCS) in Louisiana through the Emergency Watershed Protection Program (EWP). EWP was set up by Congress to respond to emergencies created by natural disasters to relieve imminent hazards to life and property. NRCS is responsible for administering the program and works with political subdivisions in respective states to do so. This program serves to remove debris in streams, canals, and ditches that may threaten life or property in the event of another major storm, or to stabilize stream banks and protection levees that are damaged and may or have failed during an additional storm event. EWP pays 100% of the costs for this debris removal or stabilization work in "exigency" situations. An "exigency" situation is defined as a situation that demands immediate action to avoid potential loss of life or property, including situations where a second natural disaster event may occur shortly thereafter that could compound the impairment, cause new damages or the loss of life, if action to remedy the situation is not taken immediately. Landowners need to contact their local Police Jury, city/parish government office, or other sponsoring governmental organization to request entrance into EWP and assistance from the program.

We are acknowledging 1 new Natural Areas Registries this quarter. **Vandene's Hill Natural Area** is a 1.75-acre mixed hardwood – loblolly forest with cypress and willow at the water's edge of Toledo Bend that is owned by sisters Kay Bray and Sandy Horn. It is located on a peninsula in the east bank of Toledo Bend. The owners have been restoring the property to its native vegetation and removing exotic plants.

Want to Permanently Protect your Natural Area?

Natural Areas Dedication is an option for those registered members that may be thinking about permanently protecting their natural areas. An owner can dedicate his or her area as a Natural Area Preserve by transferring the ownership, or a real right in the property, to the Department of Wildlife and Fisheries (LDWF) by donation, sale, bequest or bequest. LDWF would then develop a plan that would best provide for the protection, preservation, and management of the dedicated natural area preserve for present and future generations.

Sale to LDWF at full-appraised value: The state would have property appraised at state's expense, an attorney appointed by the state would do title transfer. Property

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would be dedicated in perpetuity (protected forever).

Sale to LDWF at reduced appraised value: The state would have property appraised at state's expense, an attorney appointed by the state would do title transfer, and the landowner would get an IRS tax break to the extent the value of the property exceeded the sale price.

Conservation Servitude: LDWF lawyer would facilitate. LNHP and landowner would develop management plan in perpetuity, and landowner could continue to live on or visit the property. See insert for other organizations for help.

Donation to LDWF: LDWF lawyer would facilitate. Landowner could stipulate requirements to be met by LDWF and landowner would get an IRS tax break for the value of the property.

Please contact Kenny Lang (225) 765-2810 with Land Acquisition or Patti Faulkner 225-784-2204 with LNHP if interested.

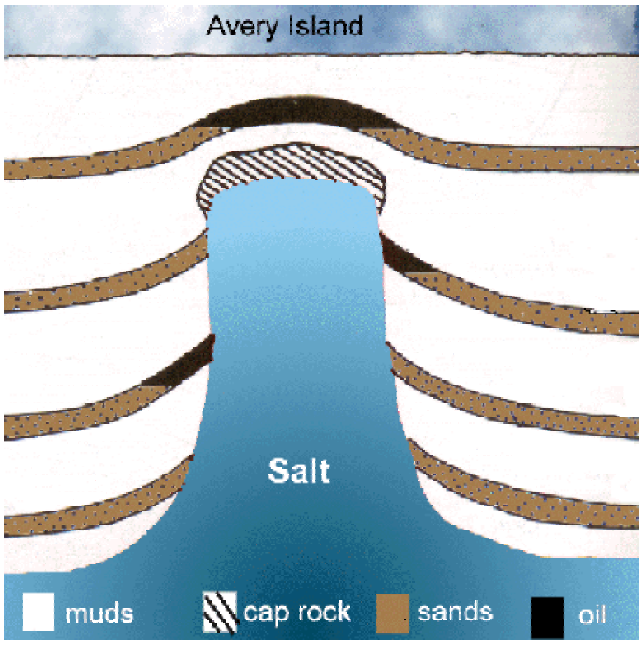
SALT DOME HARDWOOD FOREST

Introduction: Salt Domes

Martinez, J.D., 1991, *Salt domes:* American Scientist, v. 79, no. 5, p. 420-431.
Edited by Patti Faulkner

There is a geologic belt extending from eastern Texas to western Alabama, and from the Gulf coast to about the latitude of Shreveport-Dallas, where a vast underground layer of salt was laid down millions of years ago, and subsequently covered by layer after layer of sediment. This layer of salt, called the Mother Bed, formally referred to as the Louann salt, began forming during the Jurassic some 150 million years before present (ybp). The Louann salt extends southward to a great wall of salt, the Sigsbee Escarpment, located 100 miles off the present shoreline. The Louann salt bed is miles beneath the surface, and it is available to us through salt domes, extrusions of salt that extend to or near the surface. We normally see salt domes at the surface in one of two forms:

1) As an elevated area, usually surrounded by marsh called an island in south Louisiana, approximately a couple of miles in diameter (e.g., Weeks Island, Avery Island, Cote Blanche). This occurs when the extruding salt pushes the surface upward.



2) As a subsided area. This occurs when the ground water moving past the top of the dome dissolves it faster than the column is rising, thus causing the surface to subside.

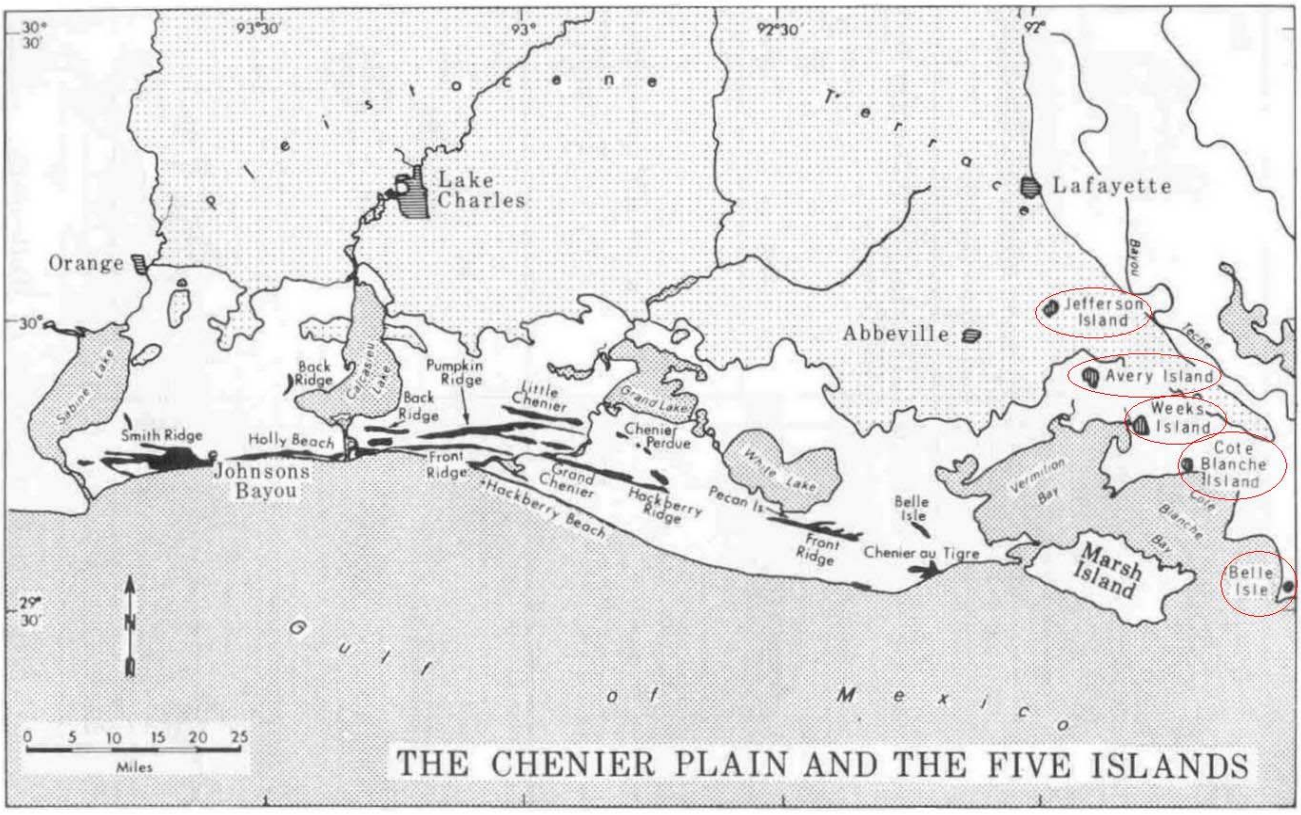
The salt domes are actually the tops of fingers of salt extending toward the surface from the Louann salt. These may extend miles above the Louann salt and may be a couple of miles wide. They rise toward the surface because the salt is less dense than the overburden soils. One theory suggests that the salt rises up the center of the salt column, travels laterally when it reaches the top, and then moves down the sides and curls under itself, just like a mushroom cloud of an atomic bomb (termed toroidal flow). As the column extrudes upward through the sediment (a process called diapirism), it bends the sediment layers above it into isoclinal folds.

SALT DOME HARDWOOD FOREST COMMUNITY

Photo by Chris Reid

These upland forests occur on loess-derived silt loams (wind blown soils) over salt domes in coastal Louisiana. The canopy is dominated by live oak (*Quercus virginiana)*, southern magnolia (*Magnolia grandiflora*), cherrybark oak, (*Quercus pagoda*) American elm (*Ulmus americana*), sweetgum (*Liquidambar styraciflora*), basswood (*Tilia americana*), water (*Carya aquatica*) and pignut hickory (*Carya glabra*). A sparse shrub layer of dwarf palmetto (*Sabal minor*), muscadine grape (*Vitis rotundifolia*), common greenbrier (*Smilax rotundifolia*), and the invasive exotic Christmas berry (Ardesia crenata) are present. The epiphyte resurrection fern (*Polypodium polypodioides*) is quite common in canopy trees. The patchy to dense understory consists of cherrylaurel (*Prunus caroliniana*), yaupon (*Ilex vomitoria*), French mulberry (*Callicarpa americana*), and red buckeye (*Aesculus pavia*). The herb layer is typically sparse and includes bristle basketgrass (*Oplismenus hirtellus*), black snakeroot (*Sanicula canadensis*), wax mallow (*Malvaviscus arboreus*), and Carolina elephant's foot (*Elephantopus carolinianus*). Common woody vines include Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), blackberry (*Rubus* SPP.), and saw greenbrier (*Smilax bona-nox*). Plant species are similar to those that occur on Cheniers (sandy deposits along the coast that form ridges where oaks typically grow; chene – French for oak).

The figure below shows the 5 coastal salt domes in Louisiana located along the right side of the map (Jefferson Island, Avery Island, Weeks Island, Cote Blanche Island, and Bell Isle). Reference: "Atlas of Louisiana: A Guide for Students" by Milton B. Newton, Jr. LSW School of Geoscience Misc. Publication 72-1



RESTORATION AND ENHANCEMENT PROJECTS

by the Black Bear Conservation Committee

The salt domes in coastal Louisiana are islands of upland forest in a sea of marsh, swamp, and marginal habitat for terrestrial fauna. They provide several thousand acres of upland habitat at or very near the coast of the Gulf of Mexico. Besides providing upland hardwood habitat that provides diverse seasonal food items for bears and other mammals, the domes offer the first forests that migratory birds encounter after their spring flight northward from Mexico, Central and South America.

The Black Bear Conservation Committee (BBCC) is working with landowners to restore salt dome hardwood forest habitat on Avery and Weeks Island in Iberia Parish, LA. Both have active commercial salt mines. Avery Island has about 100 people that live and work there. Weeks Island has no full time inhabitants, but approximately 100 employees work there. Workers and inhabitants of both domes are very supportive of Louisiana black bear recovery efforts. Both locations have dense bear populations and have historically experienced above average nuisance bear activity. Bears captured on or near these domes tend to be healthier, heavier, and have greater reproductive success than bears found elsewhere in the coastal zone, indicating the relative quality of the habitat on these sites.

Restoration and enhancement projects include planting native forest species on agricultural and mowed fields and controlling feral hog populations with corral traps. Salt dome hardwood forest restoration will re-establish this coastal forest community that is considered critically imperiled both in Louisiana and globally. Less than 5% of these communities remain and are only found in a few sites in Louisiana and Texas, and those in Texas are degraded by invasive exotic species. Restored salt dome hardwood forest would directly benefit 7 rare plant species associated with this particular community type, including the state's critically imperiled lance-leaved glade fern (*Diplazium lonchophyllum*), Texas aster (*Symphyotrichum drummondii*) shown below left by www.sbs.utexas.edu, and woodland bluegrass (*Poa sylvestris*).

There are also many animal species that use resources found in salt dome hardwood forests. Over 250 species of birds migrate across the Gulf of Mexico each year, and the forests of coastal Louisiana offer the first and last lands available that can provide critical food resources and secure resting areas for birds returning from and departing on their long flights. Salt dome hardwood forests provide neotropical migrants, such as the state's critically imperiled Cerulean warbler (*Dendroica cerulean*) male shown above, a chance to replenish their fat stores and prepare for their long migration to and from summer breeding and wintering grounds. Some neotropical migrants will remain to breed in coastal forests, such as the Indigo bunting (*Passerina cyanea*), Painted bunting (*P. ciris*) male shown below, White-eyed vireo (*Vireo griseus*), Northern parula (*Parula Americana*), and Orchard oriole (*Icterus spurious*). It is widely recognized that the steep decline in neotropical migrant populations is a reflection of habitat loss in summer, winter, and migration corridor habitats. Cerulean Warbler photo by Brian Small. Painted Bunting photo by Jim Rathert with Missouri Conservationist.

LANCE-LEAVED GLADE FERN DIPLAZIUM LONCHOPHYLLUM

Lance-leaved glade fern is known in the United States only from Louisiana. Our two known populations are in salt dome hardwood forests on Weeks and Cote Blanche Islands. It was known to occur on Avery Island at one time, but it is thought that changes in the forest

structure, caused by hurricanes, led to its demise there. Lance-leaved glade fern is at the northern limit of its range in Louisiana. It extends southward through Mexico and Central America into northern South America. It is likely that spores of this species were transported to Louisiana by tropical storms.

The Weeks Island population was last observed in 2003 and 200-300 were plants seen during a casual survey. The plants were growing in a ravine and were associated with Japanese false spleenwort (*Deparia petersonii*; an exotic that is spreading in south Louisiana), cherry laurel (*Prunus caroliniana*), American beautyberry (*Callicarpa americana*), spicebush (*Lindera benzoin*), wood nettle (*Laportea canadensis*; stings badly when touched), swamp chestnut oak (*Quercus michauxii*), and sweetgum (*Liquidambar styraciflua*). The Cote Blanche Island population was last observed in 1989, and only a couple of plants were found. Additional searches are needed on Cote Blanche. Phots by Chris Reid.

Those interested in Louisiana Ferns should purchase *Louisiana Ferns and Fern Allies* by John W. Thieret. This guide was published by the Lafayette Natural History Museum in conjunction with The University of Southwestern Louisiana (now ULL). It contains keys, distributions, line drawings etc. for all of our ferns. To purchase a copy, contact Garrie Landry of the ULL Biology Department. The Biology Dept. address is P.O. Box 42451, Lafayette, LA, 70504, and the phone number is 337-482-6748.

LOUISIANA BLACK BEAR

Federal status: Threatened (January 7, 1992)
State status: Threatened (August 20, 1992)

This large, shy, bulky mammal is readily recognizable. They have large heads that are rather blunt in profile, relatively small eyes, broad nose pads, and very short and inconspicuous tails. The bear's fur is dense and usually black. A whitish patch may be present on the lower throat and chest. The track pattern is distinctive – the hind footprint is almost human-like; front prints about 12 cm (4.7 in) long and 8 cm (3 in) wide, back prints 17 cm (6.7 in) long, 7 cm (2.8 in) wide. The outside toe print is generally larger than the other 4 and the claw prints are usually obvious.

Hibernation: Black bears den in hollow logs, in large tree cavities, beneath fallen trees, and under thick brush during winter. The bears in this region do not hibernate all winter, but they do sleep and don't eat, drink, or excrete waste for weeks or months at a time in winter. Several days before entering the den, a bear consumes roughage, including leaves and bits of its own hair. These form a plug up to a foot long in the digestive system that is voided after the bear emerges from the den.

Reproduction: Black bears are usually solitary, although cubs remain with the mother for about 16 months. Females produce 1-5 cubs (usually 2) every other year starting when they are 3-5 years old. Cubs are born during hibernation. At birth, the cubs weigh about nine ounces and are the size of a stick of butter. The cubs will weigh about 3-5 lbs when

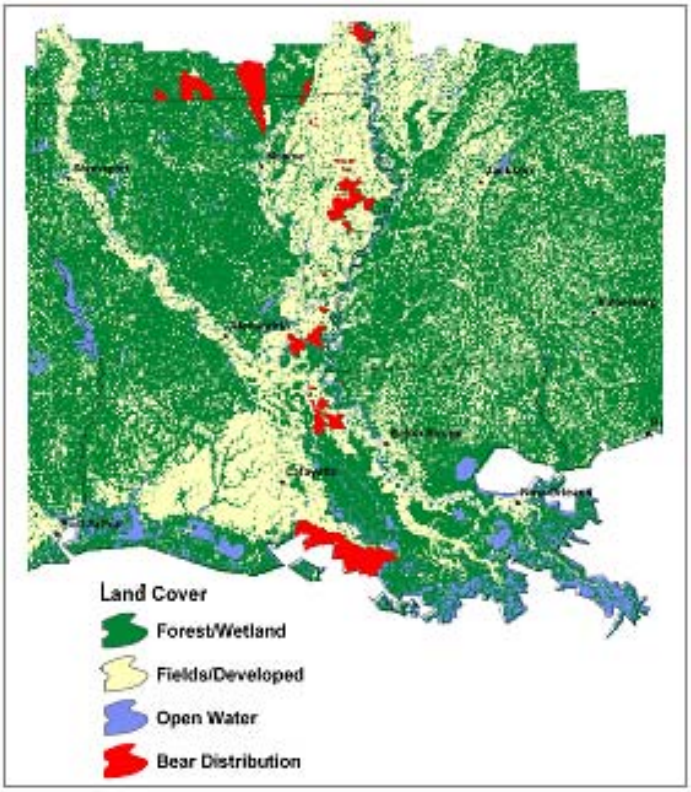
the female emerges from the den and will increase to about 75 pounds by the end of summer.

Diet: Black bears are omnivorous and eat a wide variety of foods; over 90% of their diet is vegetable matter. In spring, succulent vegetation, agricultural crops, and insects are consumed. Bears have a long sticky tongue for probing into holes and cracks for insects. Bears will dig up underground wasp nests to eat the insects, nest and all. In summer, bears eat crops and soft mast (i.e. dewberry, wild grape, palmetto) and then in the fall, concentrate on hard mast (i.e., acorn, pecan, hickory).

Bear sign: Black bears use trails just as people do since it's easier to travel through underbrush. Being aware of tracks, droppings and other bear signs (claw marks on trees, rotten logs ripped apart and hair on tree bark from rubbing), will allow you to determine bear presence. They are intelligent, curious, and can see colors, form and movement. Although their vision is good, they generally rely on their acute senses of smell and hearing to locate food and warn them of danger. Adult bears make a variety of sounds; the most commonly heard sounds are woofing and jaw-popping. Young bears typically whimper or bawl.

Greatest misconception: The greatest misconception about black bears is that they are likely to be aggressive and attack people. Brown (or grizzly) bears are the more aggressive of the 2 species because they evolved on the plains, where the only option to deal with threats was to be aggressive. Black bears evolved in the forest, so they respond to threats through escaping by climbing trees or hiding in brush. The Louisiana black bear has never acted aggressively toward a person, much less attacked anyone, in recent history.

Habitat: Salt dome hardwood forest, cypress-tupelo swamp, cypress swamp, bottomland forest, coastal marsh.



Distribution: Black Bears are primarily restricted to large tracts of heavily wooded bottomland hardwoods and swamps in the Tensas and Atchafalaya river basins, and wooded corridors adjacent to sugarcane farms in St. Mary Parish. They were formerly numerous and found throughout Louisiana, most of Mississippi, east Texas, and southern Arkansas. Known populations exist in the bottomlands of northeastern Louisiana in the vicinity of Tensas River National Wildlife Refuge, adjacent to the northern and southern portions of Atchafalaya River Basin, and in Iberia Parish where salt dome hardwood forests exist. Bears have been sighted throughout their historic range, and these are usually young animals dispersing in search of new home ranges.

Reasons for decline: The most direct cause of black bear population decrease in Louisiana was conversion of vast tracts of bottomland hardwood forest to agriculture, especially in the northeastern part of the state. A secondary factor contributing to the decline was human-caused mortality through poaching, unregulated hunting, and vehicle-collisions.

Conservation efforts: (1) Closed season for hunting bears; (2) Implement $10,000 civil penalty for illegal take; (3) Illegal to feed wild bears in Louisiana (4) Conduct research on Louisiana black bears (5) Educate public regarding bear distribution and needs; (5) Develop

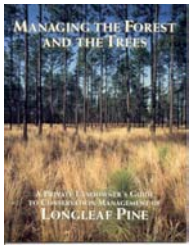
and implement bear recovery plan through the BBCC, a cooperative partnership of state, federal, and private organizations.

References:

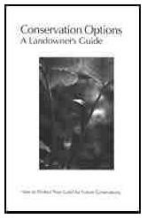
- Black Bear Fact Sheet – LNHP at http://www.wlf.state.la.us
- Black Bear Conservation Committee - http://bbcc.org/
- Black Bear Sign - http://www.bear.org/Black/Sign/Bear_Sign.html
- Black Bears - http://www.humboldt.net/~tracker/bear.html
- Bear Country U.S.A. - http://www.bearcountryusa.com/information

Books Available from LNHP

The USDA Forest Service Southern Research Station (SRS) has published a new guide for identifying and controlling non-native invasive plants in Southern forests. Written by Dr. James H. Miller, research ecologist at the SRS Forest Vegetation Management unit in Auburn, AL, "**Nonnative Invasive Plants of the Southern Forests"** provides an important new resource for individuals and agencies trying to control the spread of these plants. Nonnative invasive plants infest millions of acres of public and private forestland in the Southeast U.S, destroying native plant communities, stopping productivity and limiting diversity. Largely unnoticed by the general public, these plants are steadily moving deeper into the forest along corridors formed by roads, trails, streams, and rivers. Integrated pest management programs that use safe and effective control treatments are urgently needed to stem the spread and reclaim forest habitats.



"Managing The Forest and The Trees: A Private Landowner's Guide To Conservation Management of Longleaf Pine" by the USDA Forest Serve, Southern Research Station, General Technical Report SRS-62.. This guide is intended for the private owners of moderate-sized, existing stands of longleaf pine who want to manage their woodlands profitably while also maintaining the natural integrity of the ecosystem. A forest ecosystem includes all of the plants and animals, as well as the natural processes that shape and maintain the forest. This guide provides information on successful ways to manage a longleaf pine forest. It covers the entire range of longleaf pine in the Southeast, focusing on four regional landscapes and a variety of management objectives, challenges and successes. Among the many benefits of growing longleaf pine are timber and pine-straw production, enhanced wildlife habitat and hunting, conservation of native species, increased woodland beauty and an understanding of the historic role longleaf plays in Southern heritage.



"Conservation Options: A Landowner's Guide" printed by the Land Trust Alliance
For anyone who knows little or nothing about the tools and tax benefits of private land conservation, this attractive 57-page booklet explains it all. No other publication offers so much information about how to conserve open spaces, including dollars-and-cents examples of the tax benefits of open space protection. Updated in 2003 to reflect the tax law. 57 pp.

"Rare Plants of Pine – Hardwood Forests in Louisiana" by Julia O. Larke & Latimore M. Smith formerly of LDWF. This manual provides accounts of 24 plant species, both herbaceous and woody, that are currently considered rare in Louisiana and are typically found growing in what may generally be called mixed pine-hardwood forests. These species were selected from about 85 state-rare plants known to occur in various types of pine-hardwood communities across the state.

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Title Correction:

I would like to make an apology to the staff of the United States Forest Service (USFS) for an error made in the July 2004 Newsletter. The USFS 3 new Natural Areas that were incorrectly cited as being registered by the United States Fish and Wildlife Service.

Sincerely,
Judy Jones

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